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ABSTRACT

Preoccupation with the science of educational evaluation has led educators to overlook the art of evaluation, the ability to make quick and accurate assessments, usually without statistical props. This paper suggests common-sense steps to insure accurate assessment of innovative structures. (1) Know the nature and purpose of innovation. An urban school system may innovate in desperation; suburban schools may make administrative or procedural changes out of jealousy of another suburb. (2) Know how interference from the physical product affects sound assessment. The attractiveness of a set of books or other materials may blur an educator's judgment. (3) Know how interference from human factors affects assessment; nice teachers or appealing children can distort analysis of real issues. (4) The relationship between claims and reality must be carefully assessed. The innovation's purpose must be identified and its performance of that goal evaluated. (5) Know the theory or knowledge base underlying the structure or program. It must be determined whether the program successfully fits its theoretical teaching and learning framework. (6) Know which areas are susceptible to innovation and which are resistant. The public will often resist innovation in certain areas and attempts at change will fail. (CHK)

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How Can We Assess Innovative Structures and Programs?

Roger W. Shuy
January, 1976

The problem of how to evaluate or assess educational innovations has always been difficult. A quick search of books and articles on educational evaluation will yield a number of works which are heavily laden with terms such as feedback factor, ipsative analysis and process determinants as well as a bewildering array of statistical displays. It appears that somehow the art of assessing has been turned into the science of evaluation, and this magic has been wrought by the mystery of mathematics.

There is an increasingly old proverb in education in which it is maintained that educators use evaluation the way a drunk uses a lamp-post: more for support than for enlightenment. To this observation it has become increasingly clear that evaluation is also being used to impress with our scientific know-how. If statistics can be applied, somehow we feel better about it all.

In light of this situation, I would like to suggest that some very important ingredients are being overlooked. However important the science of educational evaluation might be, the practitioners still have to depend on the art of evaluation - that ability to make quick and accurate assessments of materials, programs and staff, usually without the benefit of chi-squares or regression analyses. Like effective management techniques, good assessment follows the principles of simple common sense. Oddly enough, when faced with a new technique or product, many administrators forsake the principles of common sense and are taken in by the pressures of the situation. There are several safeguards against such failure and it is the purpose of this paper to suggest six positive steps to be taken to insure accurate assessment of innovative structures and programs in the educational setting.

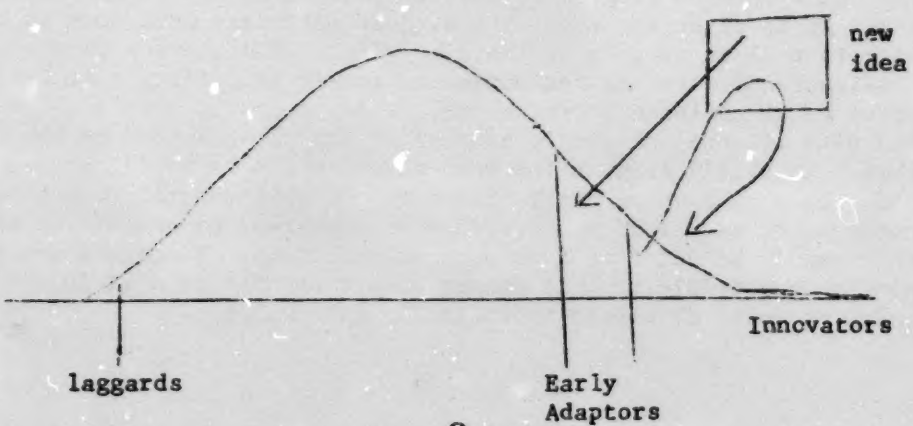
1. The nature of innovation: Know why you are innovating

For one thing, the nature of educational innovation should be clearly understood. There are two common motivations for a school system to innovate at all. One motivation can be called the "urban" model of innovation. We call it "urban" because it describes the major locus of this type of innovation. Philadelphia adopted the Parkway Plan, a unique solution to classroom crowding in the Philadelphia schools when the school system's back was against the wall. When things are so dismal that there is nothing else to do, a school district is sometimes driven to exciting innovative practice. Desperation of this sort is sometimes the mother of creativity but it can also be the first step in a move toward futility. An example of this sort

of educational practice is the now discredited but formerly acclaimed practice of performance contracts. Performance contracting in reading, at any rate, proved to be a dismal failure for a number of reasons but primarily because more attention was given the method of finding accountability than was given the substance being measured. In any case, the urban motivation for innovating stems from a kind of desperate effort after all else has failed. Like prayer, it is considered when there is no where else to turn. The Urban innovation model grows out of a definite sense of need.

In contrast to the urban model is the "suburban" motivation for innovating in the schools. Suburban schools may have genuine problems but they are much less frequently recognized. Thus, when innovation is considered in a suburban school, it is done so more out of a desire to keep up with another suburb than it is from a recognized failure. This model is sometimes referred to as the jealousy model in educational innovation. It produces less dramatic innovations (the development of a middle school, for example) and almost always these innovations are administrative or procedural rather than content based. New arrangements of schedules, classroom management or building design dominate in the suburban model of educational innovation.

To be sure, there are other reasons for innovating besides desperation and jealousy, but examination of actual practice has clearly indicated that these two motivations are most commonly used. One might innovate, for example, because new knowledge is discovered or because internal evaluation has revealed a specific need but seldom does this appear to be the case in the public schools. A commonly used model of innovation seems to be illuminative here.



whether it relates to medicine, agriculture or education, innovation seems to follow a normal bell curve. At one end are the laggards, who never seem to make it and, it is hoped, ultimately drop out. At the opposite end are the innovators, those who actually will seek out the new idea and bring it back and apply it. Such practitioners are unusual and they frequently do not last long. Their strength becomes their weakness and they are thought of as kooks by the non-innovators, who either grow to resent them (forcing them out of their field) or become afraid of them that they the innovator is promoted out of the competitive arena. Early adaptors are not quite so creative or adventuresome. They do not go after the new idea but, if it should come to them, they are perfectly capable of adapting it. Most school systems are not innovative to the extent that they go after the new idea, modify it and apply it. School systems offer little time for this sort of thing. On the other hand, many are clearly the early adapters of new ideas, provided that the idea is convincingly presented. When such occasions arise, a number of factors can combine to interfere with a wise decision. Some of these factors include the interference from the physical product, from the people or human factors involved, from the relationship between claims and reality and from the theory underlying the innovation. Let us examine each of these potential interferences in more detail.

2. Interference from the physical product: Know how this affects sound assessment.

It seems unnecessary to have to say that the attractiveness of the product, for example a set of student books, will interfere with our objective judgment of this product. Yet this is a critical interference factor and one to which publishers are particularly sensitive. It seems embarrassing to admit that we like a social studies series because it is attractively illustrated but there is almost no way around this issue. Recently I participated in a two day site visit and evaluation of a government sponsored program to develop reading materials for the middle grades. As is often the case, the student materials were sent to the evaluators well in advance of the site visit. The stories were clever and the evaluation experience was pleasant, for it is difficult to become very negative about children's literature. I found myself more and more contented with the project simply because of the glow created by the happy stories. Naturally we want the student materials to be attractive and to provide the same sort of happy affect on the children who read them, but in our role of assessors of materials and programs we cannot let the aura of this aspect to defer us from our analytic role. Educators are particularly susceptible to this danger simply because we deal in children and with products developed specifically for children.

3. Interference from human factors: know how this affects assessment of innovations

On many occasions I have participated in school visits, evaluations or ceremonial involvements which have included actual visits to real classrooms. Here the dangers of subjectivity are even greater for the influences of children on sympathetic adults can be tremendous. I have actually witnessed a miserably taught class using incredibly irrelevant and useless materials and I still went away with a warm glow for the children which neutralized an otherwise justifiably negative assessment. Even in the program evaluation of adults who are developing teaching materials, the opportunity for neutralizing negative feelings is increased with the addition of human contact.

In the same site visit evaluation of reading materials noted above, I had to consciously combat my tendency to rank the program too positively first because of the effect which the children's level materials had on me and then because of the effect of the nice people who were developing the program. What the materials and the staff failed to provide was a picture of the rationale and dynamics of the project. To get at these, I gave an assignment to be completed after the site visit ended. It contained several questions to be answered in the period of the two weeks following. One question asked the project leaders to provide a rationale describing the uniqueness of the program (it was said to be individualized and based on syntax processing). A second question asked for the same sort of rationale only in, this case, it was to be written for the parents. Other questions related to different aspects of the project which are not relevant to this discussion. The point which I wish to make here is that to obtain a clear judgment of the quality of the program, it was necessary to consciously guard against over-reliance on those aspects of the program which carried heavy emotional, empathetic or nostalgic appeal and to push toward analysis which dealt with the specific issues to be assessed.

4. Interference from the relationship of claims and reality: An important criterion for assessing innovations.

Assessing an educational program or structure is a great deal like reviewing a book. The greatest failure and inaccuracy in book reviewing grows out of the refusal to answer three basic questions:

1. What does it say it will do?

2. Does it do it?

3. Does it do it well?

Many books are criticized by reviewers for not doing something, they never promised in the first place. When D.H. Lawrence's novel, Lady Chatterly's Lover, was reviewed negatively in Field and Stream for its failure to

accurately describe the British gameskeeper's daily routines, one can only wonder what was in the reviewer's mind. The book is a novel. As such, the accurate portrayal of occupational roles is, at best subsidiary to the major goal of entertainment or revelation of some larger theme. It is grossly unfair to expect a reading series to make a direct development to spelling skill development. It can be expected that such a series will not retard spelling skills and it can be hoped that reading and spelling skills will be mutually supportive, but if the series claims only to develop reading ability, we cannot fault it for not doing something it does not promise or intend to do.

The critical question, however, is whether or not the product actually does what it says it will do. In order to assess this effectively, we must have a clear notion of what the task is that is being promised. On the surface, this may seem easy, but things are not always what they seem.

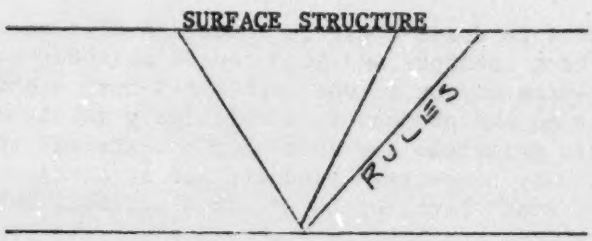
Nobody would agree that by teaching a person to use an automobile rear-view mirror we have taught this person to drive a car. For that matter, even learning to dribble a basketball is <u>not</u> an indication that the learner is a good basketball player. Yet we make similar assessments about educational products, failing to realize that the gestalt is greater than any of its sequential, component parts. Learning to read, for example involves a cumulative acquisition of early skills which, once focused more and more on larger units of processing. Consequently, any materials which claim to teach reading by dealing only with an early skill in the reading process, such as phonics, are making clear statements about the dozens of other decoding skills and comprehension measures which such a program does not deal with.

An elementary program, for example, which deals with the basic skills should distinguish between the acquisition of these skills and the learning of the behavior toward which these skills procede. In fact it may be useful to clearly distinguish among skills, concepts and behavior, so that it will be easier to determine exactly what an innovative program or product really proposes.

A few years ago a USOE advisory board had as its task the supporting and monitoring of various projects which were directed toward teaching future teachers certain concepts and skills which were determined to be crucial. The hitch was that the skills projects and the concepts projects were under separate funding and required different treatment. It was necessary, of course, for the advisory board and the projects themselves to distinguish between skills and concepts in this way. As easy as this sounded, we really had no good working definitions which suited our purposes. With typical government efficiency it was decided that various leaders in the field of education would be called together and work for two days to decide

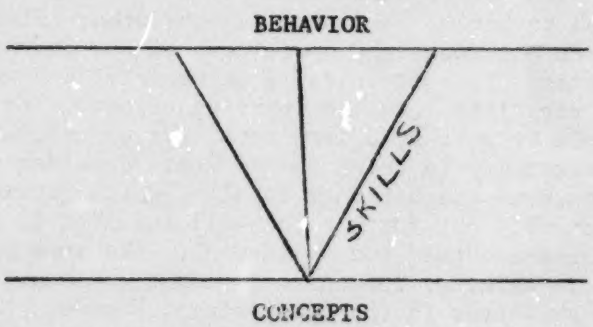
this issue for once and for all. Therefore, at a Chicago airport hotel this group met and deliberated. It found little trouble in determining the projects which were clearly concept oriented but it had a very difficult time defining the skills. After considerable deliberation, it was determined that a useful model might be borrowed from the field of linguistics. Linguists refer to the deep structure of language and to its surface structure. Rules are the devices which bring deep structures to the surface representations, as follows:

Figure 2:



As Figure 2 indicates, the same aspect of deep structure may, through the use of different rules, lead to three different surface structure manifestations. Naturally this is only a schematic representation and the situation can be infinitely complex. Borrowing this phenomenon as a metaphor, the advisory panel decided that concepts were like deep structure, that behavior is like surface structure and that skills are like rules, as figure 3 indicates:

Figure 3:



Such a model, as simple as it appears, provides access to complex explanations. Like grammatical rules, skills are relatively meaningless unless they are related to the concept from which they emanate and to the behavior toward which they are leading. A skill, by itself, is an empty thing. It is not the skill in and of itself that we wish to develop, it is the larger gestalt which embraces the concept, the skill and the ultimate behavior. Skills are very difficult to define, in fact, unless their definition grows out of such a gestalt.

Thus learning to drive a car includes a number of skills which derive from important concepts and lead toward relevant behaviors. Learning how to use a rear-view mirror is one such skill but to study "rear-view mirror looking" as an end product is a relatively futile exercise. The implication of this principle for assessing educational innovations should be rather clear. Many innovative products and strategies present only a part, often a very small part, of the desired ultimate behavior.

One of the major failures of innovative products in education, in fact, is that one segment of the concept-skill-behavior process is singled out with the claim that by improving that segment the entire process will be enhanced. This is not to deny that the innovation will improve that particular pieces of the education process. Perhaps it will help. What I am warning about is, on the other hand, that helping that part of the process in no way assures that the learning gestalt will be similarly aided.

Evidence to support this warning can be drawn from everyone's common experiences. One of my own will probably suffice. Not long ago my older son took drivers training in high school. For the duration of his course and for some time thereafter he was very critical of my driving. It appears that I violate many of the skills required of beginning drivers. I do not look at the rear view mirror often enough. I do not position my hands on the steering wheel properly. I do not do many other things exactly as he is being taught. I do not doubt the usefulness of his learning these early skills but I question the usefulness of maintaining a conscious awareness of these skills for very long into the learning process. As soon as possible, these skills should be submerged into some sort of natural behavior in which it is no longer necessary to think about them. Consider what would happen if you should return to the beginner level of skill development related to walking and consciously put forth each skill involved in moving your legs in walking. Chances are that you would fall. The same dangers exist in driving and even in talking. On one occasion a few years ago Charlie Brown, the round headed character in the comic strip, Peanuts, became "aware of his tongue." This awareness prevented him from talking for three or four days.

A major question to be asked of any innovative materials or program, then, is whether the promise relates to reality. Does the innovations itself

have the ability to do what is claimed for it? To answer this question, the buyer will have to know what is involved in the larger process, the gestalt, in order to determine whether or not the component process represented by the innovation can or does realistically represent the claim.

To my thinking, this ability to distinguish the component part from the whole and to weigh them in relationship to each other is the most difficult but highly important task in assessing the innovation. Other tasks are somewhat easier to deal with but by no means are they effectively carried out by school districts in such assessment.

One such task is to determine whether or not the gain factor claim is realistic. Can children learn to read in five weeks? Is it reasonable to assume that by feeling balloon shaped alphabet letters, the child will speed his reading? Is it realistic to think that minority children will learn to read only after they are taught to speak Standard English? These, and many other questions, can be asked of almost any educational innovation. We still do not have adequate research proof which tells us that bussing helps children learn better. Knowledge of the research base upon which educational innovations rest is a critical factor here. Innovations should make such knowledge available and understandable. If the classroom architecture which advocates no walls is said to be efficient, ask its proponent to explain why and upon what evidence his reasons rest. Once on an HEW site visit to a large Southern city I asked the Superintendent of Schools why that city was architecturally committed to building all new buildings on the "no walls" basis. His response indicated ignorance beyond belief. He said that the "open classroom" concept was proven highly successful and that this motivated their decision. Several things were wrong with his answer. For one thing schools without walls are not the same thing as the open classroom. Even the legitimate definitions of open classroom leave a great deal of confusion. I had never run into such a humorous misunderstanding of the term before nor have I since. The really sad part of this event, however, was that even after taking me on an inspection of one of his model "open classrooms" he could not give me one good reason for such an architectural commitment. Obviously, he had not even considered the claims of the innovation with regard to realistic gain factors.

Another task in determining the relationship between the innovation's claim and realistic possible outcomes is to decypher and cut through the buzz words. Teaching modules, for example, is a term which embraces a wide range of potential descriptions. Buzz words which become buzz initials are even more mysterious and powerful. C.B.T.E. developed out of a legitimate need but, like many good ideas, can be carried to unconscionable conclusions. Inordinate, isolated and indiscrimant measurement of individual competencies can provide a complex and impressive display of information, but, by its very isolation of items, it can also disguise reality.

It is truism that we should not be taken-in by buzz-words. In some cases, the buzz-words themselves reveal doubts about the innovation. Any program which offers teacher-proof materials is so insulting to the teaching profession that the product can almost immediately be abandoned. Any reading program that labels itself "the linguistic approach" can be guaranteed to not be acceptable to linguists, none of whom believe that linguistics is a methodology or that such a thing as "the linguistic approach" actually exists. If the buzz words talk-down or go out of their way to overly impress, this is a clear signal of trouble within. The innovation which must be sold by buzz-words probably will not stand the tests of time or analysis.

5. The Theory Underlying the Structure or Program: A critical measurement point in judging and innovations.

It may be the height of arrogance to suggest to a group of practitioners and administrators of practitioners that theoretical concerns can in any way be helpful in guarding against error in assessing educational innovations; but this is exactly what I am going to do. For reasons which are unknown and unclear, the field of education has allowed certain aspects of common sense to escape. Learning theory, culture theory and management theory, to name only a few of the theories which can be useful to educators, have been singularly ignored in almost all teacher training programs under the mistaken assumption that teachers can be trained to behave in the classroom without first understanding the framework into which such behavior fits. In fact, to my knowledge, education is the only field which trains its practitioners first in methods and then brings them back later, if at all, for the theoretical underpinnings of these methodologies.

The need for an overview, a framework or a theoretical base can be seen in most avenues of life if meaningfulness is ever achieved. The job of an assembly line worker who turns only one screw is made meaningful by the knowledge that this screw performs a small function in the overall workings of the final product. The absense of such a framework can be personally devestating and, in terms of classroom teaching, a learning nightmare.

I once experienced what has to be the worst example possible of this sort of problem. The success of certain English teaching materials used with Mexican Americans in New Mexico became known to a school administrator in Mississippi who concluded that if the materials worked with the Mexican Americans, they would also be good for the Black children in his system. In an effort to check on this amazing assumption, the federal sponsor of this project sent a team of observers to the rural Mississippi setting to assess the situation. What we saw was a Black teacher trying to teach about ten Black children to produce the aspirated /p/ sound which occurs in

words like pin, in contrast to the unaspirated /p/ sound in words like spin. She placed the children in a circle, gave each a lighted match, then went around the circle asking them to say pin, an exercise in which the aspiration of the /p/ is supposed to blow out the match. In her haste to move quickly the teacher forgot the appropriate key word and substituted spin instead. The conclusion was pure chaos. The teacher did not understand the reason why she was doing what she was doing. Indeed, there really was no good reason since the materials were developed for children with entirely different needs. Native Spanish speakers do not aspirate such sounds but all native English speakers do. Thus, the materials were totally misapplied to this population. If the teacher had known why she was doing what she was doing, she might have easily determined why the key word, pin, was important and the contrast word, spin, was wrong. The children, who didn't have the problem being treated in the first place, found the exercise interesting enough, at least until they could get their matches blown out by saying spin into the flame. Several burned their fingers. The teacher was embarrassed beyond belief. The teaching situation was a total disaster.

The need for an overview, framework or theory in teaching was first brought home to me when I took my methodology course as an undergraduate preparing for a secondary certificate. For reasons which I still do not understand, I did my practice teaching before I took my methodology course. Therefore, when various methods were discussed, I felt rather good about them, quite in contrast with the reactions of the other students in that class. Since it was not like me to appreciate a class in which other students were disinterested, I can only surmise that I liked the course because I had been there and the abstractions of methodology were meaningful to me because I had an experience upon which to hang them.

It is often the obvious questions which are the least visible in the development of efficient programs. Professional fund raisers, for example, operate on a number of obvious principles which, if not observed, permit little opportunity of success. Recently the head of institutional development of a large Eastern University listed a few of these obvious principles:

1. to get money, you must go to organizations which have money.

2. you don't get money unless you ask for it.

3. Seek funding when you need it.

4. It is easier to get money for specific ideas than for general ones.

5. You get more money for larger ideas than for smaller ones.

Education sometimes suffers from not asking the obvious questions such as these. Our confusion over certain basic value issues stems from some rather strange misconceptions of this sort:

1. Being right is good and being wrong is bad.

2. Because something is worth learning, it's worth learning right away.

3. Children are inferior versions of adults.

4. Constancy is good; variability is bad.

5. One methodology is better than another.

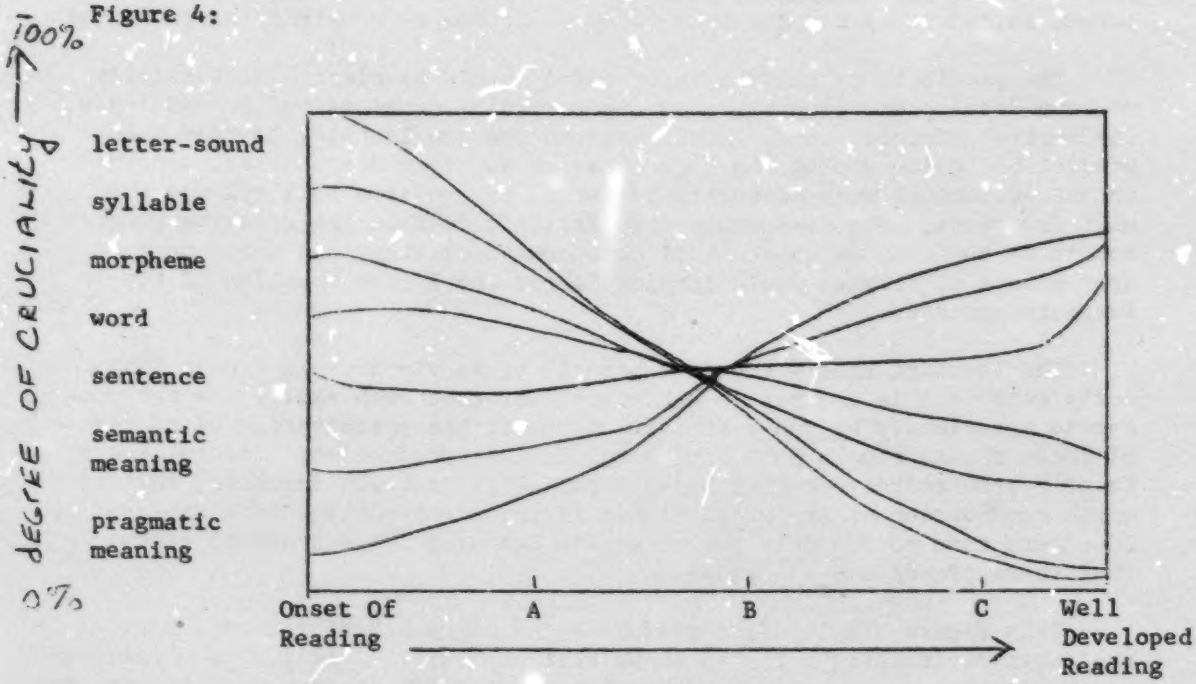
It may not be critical for administrators and practitioners to know learning theory in the advanced technical sense, but it is necessary for them to know enough about learning theory to be able to reject educational innovations which embody hollow principles such as the above. A presentation such as this does not provide the time or magnitude to illustrate the need to understand and utilize a theory of learning, a theory of language and a theory of culture in all subjects for all ages. Instead, let me illustrate the usefulness of such theoretical knowledge in one subject: reading.

A good reading program (and any innovation which attempts to relate to reading) will not be blind to what is known about how learning takes place. Nor will it knuckle under to proponents of the superiority of one theory over another when available counter-information is available.

A reading program or innovation which is based on the assumption that all learning is behavioral, for example, will need to account for a great deal of cognitive gain for which no apparent behavioral stimulus exists. Most reading programs make exactly this assumption, however, proceeding as though the act of reading is little more than the piling up of one early behavioral skill on top of another. This sort of assumption is very popular for a number of reasons. For one thing, it feeds on the public impression that basics should be the focus of all education. And what could be more basic than early skills? Secondly it does with the aspects of learning which are easiest to measure. Skills are easier to assess than are the concepts which the skills presumably implement. Third, skills are isolatable while the fact that the gestalt of learning merges, selects and reinterprets component skills which are involved is very messy to understand, much less to display. Consequently, we tend to see materials, including innovative materials, which build on the popular assumptions of the public, are easily measurable and possible to isolate for inspection. The great fact of behavioral objective writing and measuring, for example grows out of such false assumptions.

In the case of reading, we have a rather clear example of a mixture of early behavioral skills, later cognitive strategies and a potential for cultural interpretation and individual learning style. The following figure will be illustrative in this regard:

Figure 4:



It should be clear, however, that this schematic illustration is not a description based on research but rather it is a reasonable estimate of what is likely to be the case once the necessary research has been done. Of particular importance is that it displays letter-sound correspondence as crucial at the onset of learning to read, then decreasingly important as the learning to read process develops. Similar progression can be noted for each of the other language accesses, with particular focus, in the case of pragmatics, on the increasing significance of context and discourse. Note especially that both accesses are available and important at the onset of learning to read but of relatively low cruciality at that time. As the learner continues to progress however, he calls less and less on the word to sub-word level accesses and more and more on the language accesses that are larger than word level.

At this point it should be noted that most language learning activity parallels the learning to read progression insofar as the early stages of learning are relatively clear cut and show obvious gains whereas the middle level and advanced stage of language learning are less well-known and obvious. That is, in almost every case, the stages in the beginning courses in language learning are relatively well known and measurable but, as the learner progresses, the exact stages in his program are less and less clear.

From a commercial viewpoint, we know considerably more about how to construct introductory courses than we do about how to construct advanced ones.

The parallels to reading instruction should be clear. Historically we have developed reasonably good onset reading programs but increasingly ineffective advanced ones. Most children who are learning to read show predictable gains during the first year or so, then demonstrate, according to our admittedly weak measurement system, progressive fall off for the next few years. One reason for this fall off is that the teaching program continues to focus on onset skill development at stages in which more appropriate strategies would involve larger and larger chunking of the la language accesses.

The learning theory embodied here is quite simple. It argues that early entry skills are rather behavioral and that such skills are not preserved consciously by the learners. In fact, the preservation of awareness of these skills can be both boring and counter-productive. Indeed, there is no reason to believe that because the skill is worth learning, that is worth remembering after later, higher learning strategies, have replaced it. Educators tend to see only pieces of the learning process and to assume that these pieces are all equal.

This figure displays the usefulness of early behavioral skills at the onset of learning but also shows that such skills decline in cruciality as the learner progresses to higher level cognitive processes. Likewise the cognitive strategies (processing at the sentence and meaning levels) are present but not all important at the onset of reading but that they increase in significance as the readers ability increases.

It should be clearn, then, that knowledge of learning theory can be critical in assessing a reading program. Any innovation which stresses only letter-sound correspondence, only word-level processing or only sentence processing tends to present only a part of the gestalt of reading. Yet this principle is one of the least known and little used by school systems in selecting a reading program. Such systems are taken-in by every fad in the reading business, largely because they fail to hold an adequate theory of reading. The burden of this paper, in fact, is <u>not</u> that there are a dozen or so easy tricks or check points for administrators to use in the assessment of innovative structures and programs. What I am saying, quite the contrary, is that to be able to assess innovations, one must have the knowledge base and theory to assist in making such assessments.

Nor does this imply that all administrators have to know every thing about all subjects. School districts should have competent people upon whom reliance can be placed for supplying such knowledge and theory. In the case of reading, however, this may prove difficult since the field is one which might be considered highly susceptible to unfounded innovation.

Where can the administrator get this knowledge base or theoretical underpinning so critical for assessing innovations? The burden is on the producer and an effective one will provide it. This may be too much to ask, however, the administrator may need to do something more drastic. He can't be expected to know everything and it would seem that a good way to go would be to build a network of knowledgable people or organizations from whom to get spot-check assessment help. Language arts specialists in Detroit, Los Angeles, Norfolk, for example have more than once asked my professional opinion about new products or strategies. They were considering. This need not be expensive - it all depends on what amount of work is required. In some cases, organizations might be called on. The Center for Applied Linguistics, for example, provides such consulting service to many school systems, especially regarding bilingual education and general language arts. There are a dozen or so really good and conscientous critic-consultants in the reading and language arts area. There must be similar people available in other areas as well. They have the advantage of objectivity (to your system, at least) and distance. Your own staff may often be too close to the situation for such objectivity.

Any list of those who can assist the administration in making decisions relating to innovative products should include his own staff, the producer, consultants and the clients themselves. Community input at an early stage tends to avoid negative community reaction at a later date.

6. <u>What Areas Are Innovation - Susceptible? Know the difference</u>.

It has been the case, at least in recent years, that certain areas of education are more apt to be "innovated upon" than others. Reading, educational management and teaching methods are the clearest cases in point. These areas share a number of characteristics which make them highly vulnerable to innovation. For one thing, they are all highly visible to the general public and this public has not been timid about expressing dissatisfaction with what the schools are doing. The areas in which innovations are susceptible also tend to have potential for profit in a commercial sense. In contrast other content areas tend to avoid innovative intrustions, largely because they are not terribly profitable or because the public demands that their traditional approaches or content not be tampered with. Such areas include the subjects, history, language, economics, religion and literature. These areas do not stress skills to a large extent and they have the public auro of a tradition which ought not to be charged. Evidence of this resistance to change can be seen in the areas of grammar study. Our knowledge base for grammar study has undergone at least two revolutions in the past thirty or forty years, neither of which has had any significant influence on the way schools teach grammar. Apparently the

field of English is not highly susceptible to innovation. On the other hand, it is an area of high visibility (we have almost monthly national laments for how bad our children write).

At least one major publisher was very conscious of this traditional aspect of the language arts when it developed and produced its comprehensive English program. Its marketing people wanted very much to label the program revolutionary in terms of linguistics and innovative in terms of methodology. The editorial board, however, wisely resisted and requirdd that the new linguistic focus be downplayed as a selling device, largely out of knowledge that such information was out-of-place in a traditionally perceived market. People tend to not want new things done to their children's writing or grammar. They do want good things done. In such cases, the focus on newness or innovation was even bad marketing.

In terms of principles for the wary administrator to apply, it would seem that one might urge to beware of innovations in innovation-resistant fields. Either the innovator is unaware of the distinctions between favored and unfavored public dispositions (cause enough, perhaps, to doubt the innovator's perceptions) or the ultimate public judgment of the innovation will tend not to be favorable simply because it teads on hallowed ground. On the other hand, administrators should be aware that in apparently innovation-permissible areas such as teaching methods, classroom management and reading, any innovation should be seen in terms of the environment in which it operates. Innovations have not been successfully evaluated because of failure to see all of the implications involved. There is an ecology of education into which the insertion of a new product or strategy cannot be seen in isolation. What was the effect of performance contracts on teacher or student morale, for example?

Conclusion:

What has been presented is a set of suggestions or guidelines for new products, programs or gimmicks which are sometime, dignified by them educational innovations. I have suggested, in brief six major considerations:

1. Know why you are innovating before you innovate. Is it out of desperation or out of jealousy or fear of being left behind?

2. Know how to avoid over reacting simply to a nice looking product. Art departments are doing fantastically good work these days and your natural love of childhood can actually distort your perception of program.

3. Know how to be objective about the people part of innovation. Good people do not necessarily imply good innovations.

4. Carefully examine the difference, or potential difference, between the claim of the innovation and the potential for reality. Past claims of success can be objectively viewed.

5. Know the theory or knowledge base which underlies the innovation.

6. Know the difference between innovation-susceptible areas and innovation resistant ones. Your choice of success in the later is slim, no matter how good the product may be.

In addition to these guidelines, let me also suggest that the innovation not be judged solely on the basis of the sales person's presentation. Textbook selection for the state of Texas rests on such a performance. I once observed the process and found that it ludicrously represents the product under inspection. Nonetheless, the representative of the innovation can be global rather than narrow, the representatives have (or should have) answers to the specific questions. Ask how and why rather than what. In addition ask process questions rather than product ones. Ask the representative what he would do under such circumstances. Ask for definition of terms. I once learned that an innovation peddler thought individualization referred to learning rather than to teaching. When I asked him how anybody could learn in any other way besides individually, he was non-plussed. If the salesperson cannot answer these questions, do not be surprised but expect him to get them for you.

Having gone through these guidelines and suggestions I must now make a confession. This confession is that if I were an administrator, the single most important thing I could do for educational practice in my district would be to insure that my teachers were knowledgeable. As a person who develops and helps write teachers manuals and educational programs of several types I must admit that materials, techniques, methods, strategies and other gimmicks are less important than what the teacher knows. The greatest thing we can offer our children is teachers who know how to use these guidelines. Perhaps the time will come when our teacher preparation institutions will do this well. Perhaps the time will come when administrators learn to distinguish and select only competent and humane teachers. Perhaps the day will arrive when our priorities move from tricks and fads to solid knowledge. But until such a time arrives I recommend, as a minimum effort, that we apply these guidelines suggested here today.